

Fig. 1

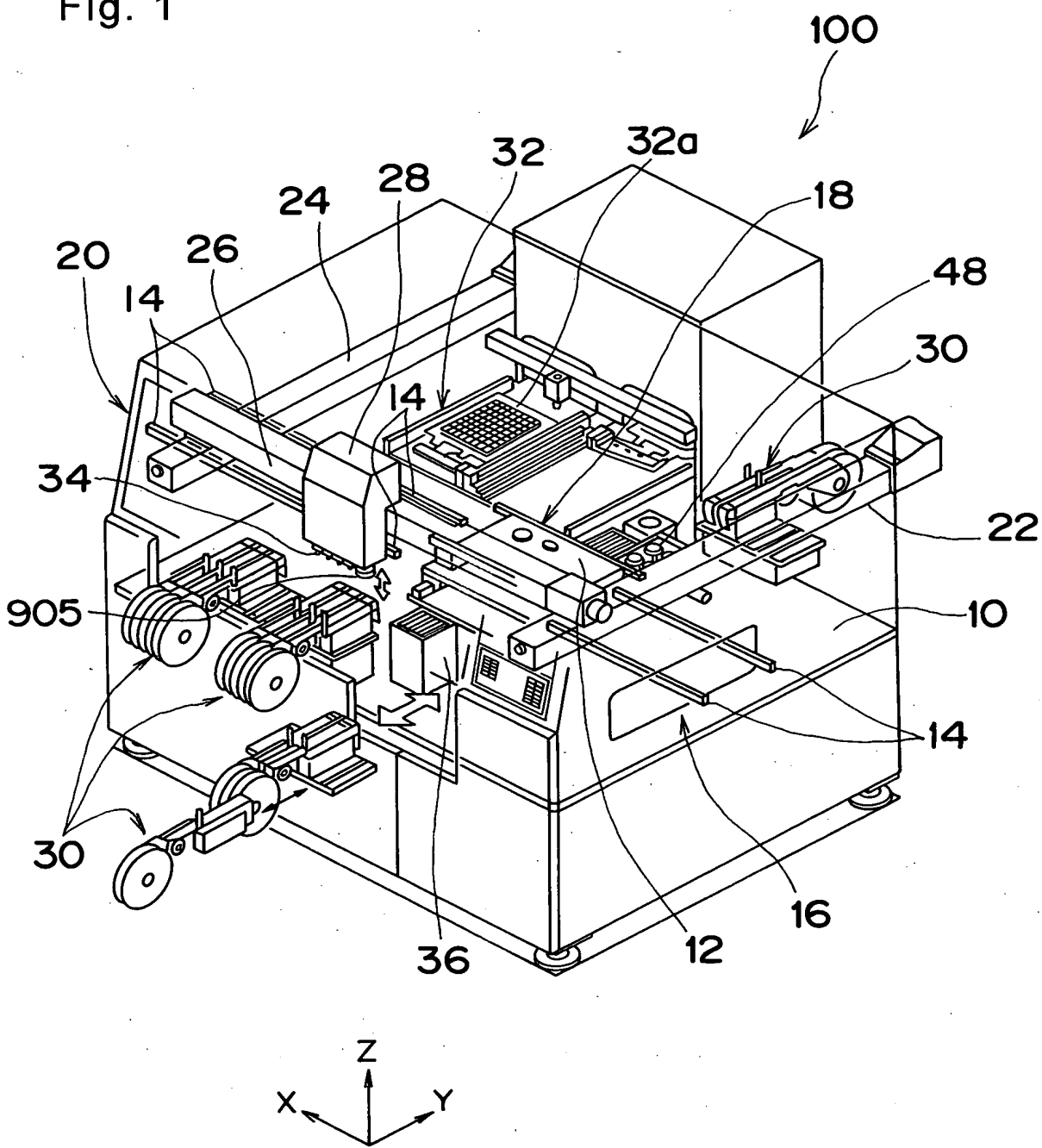


Fig. 2

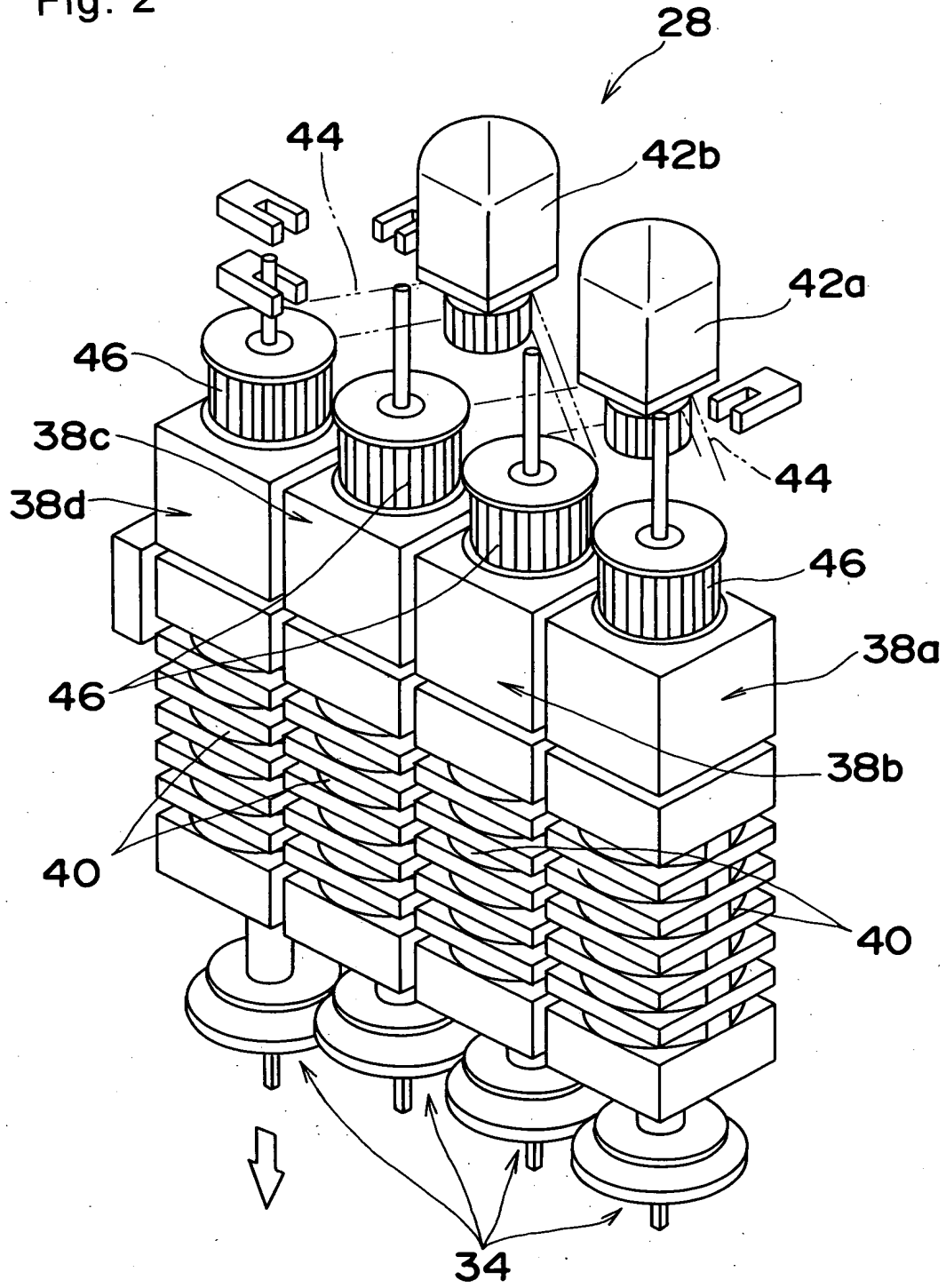


Fig. 3

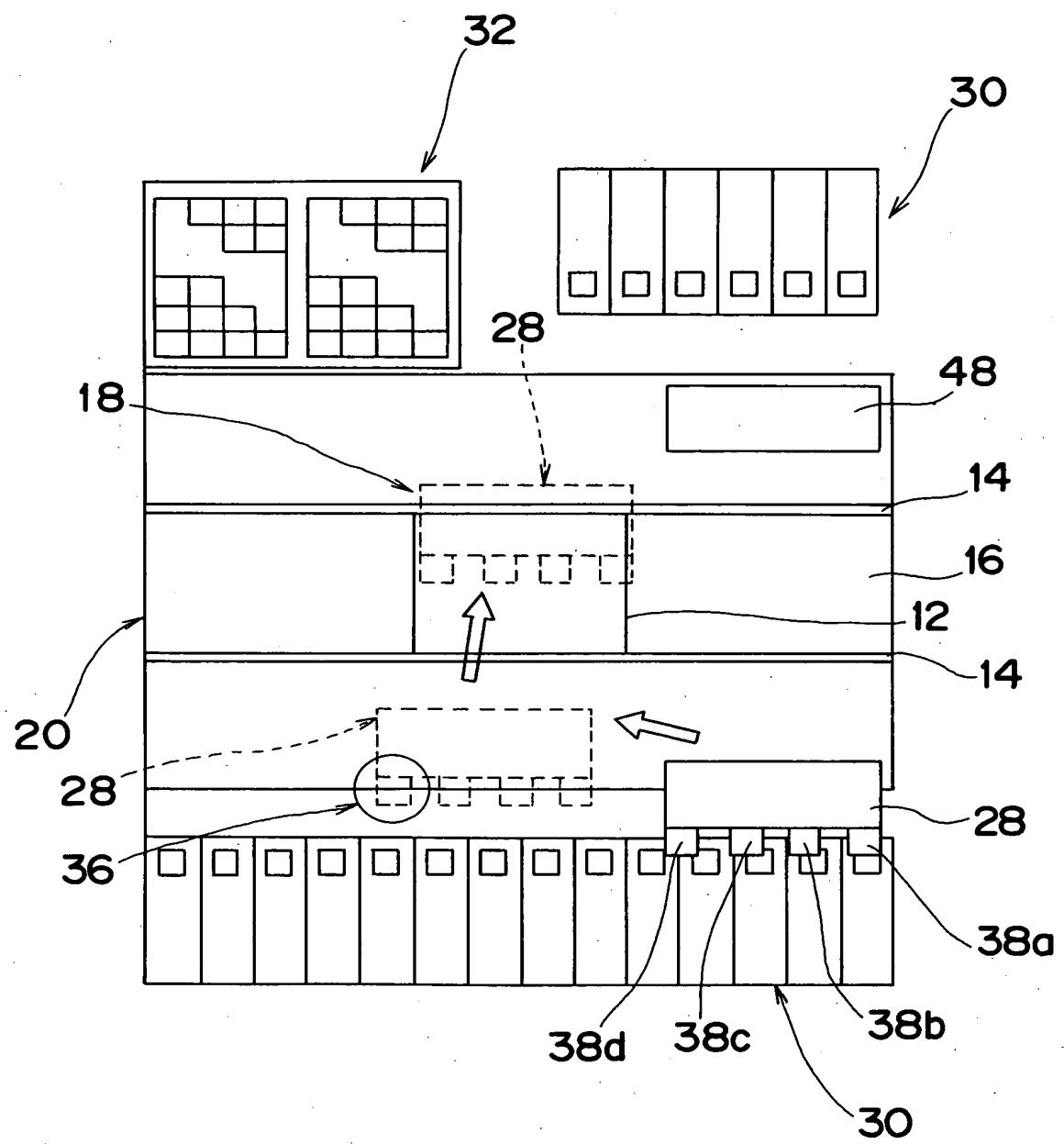
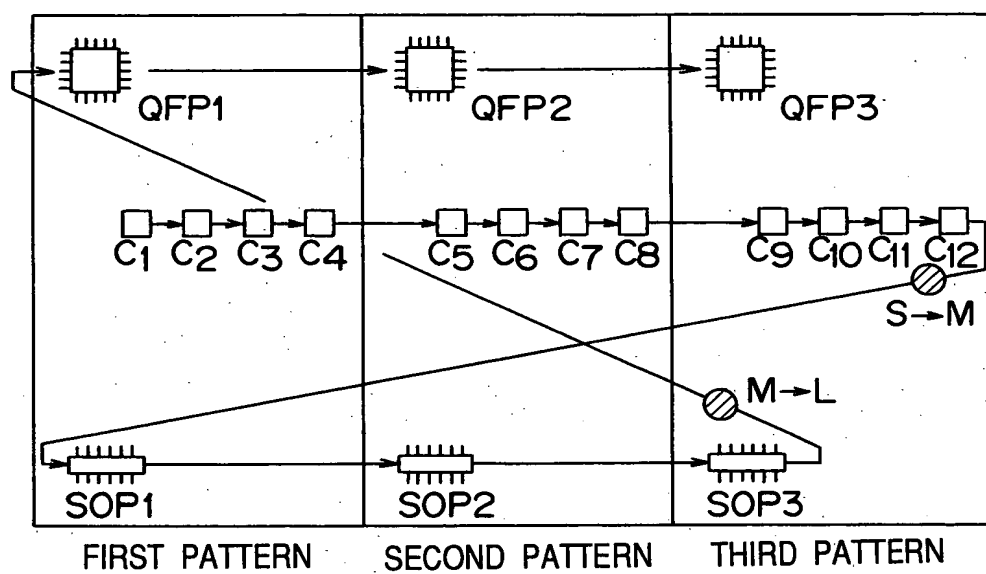


Fig.4



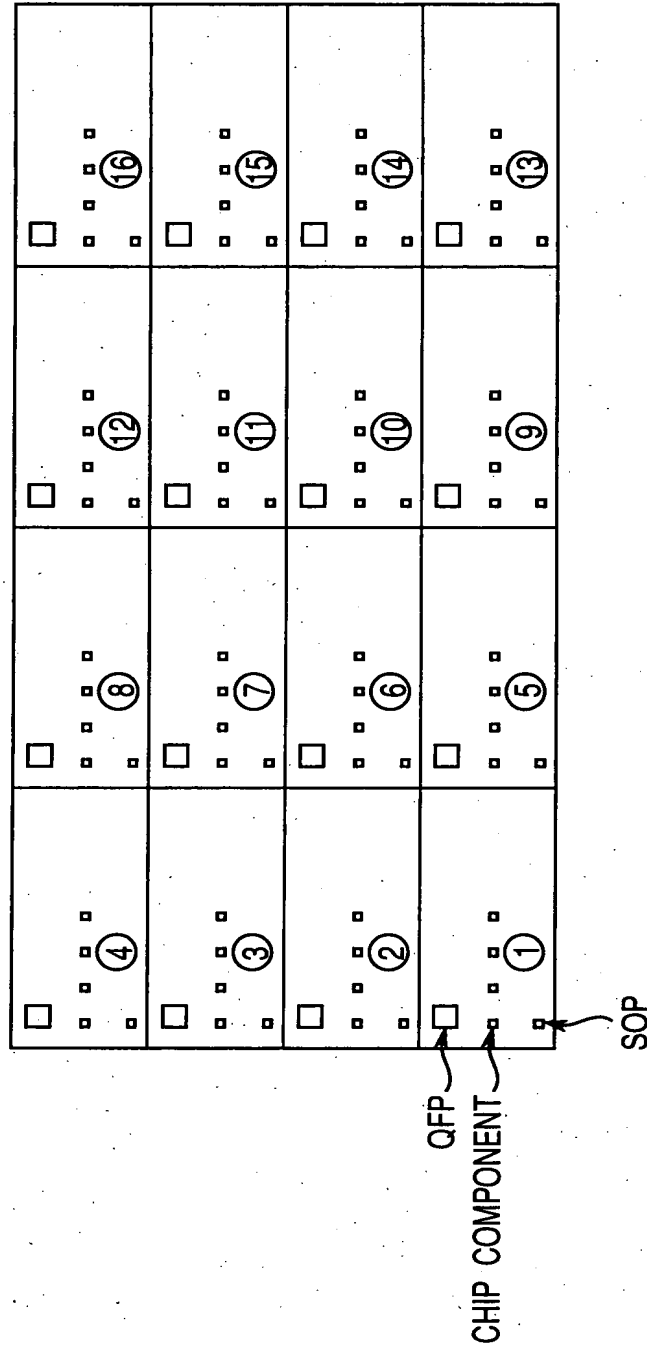
● NOZZLE CHANGE

5/21

Fig.5**TASK REPEAT METHOD**

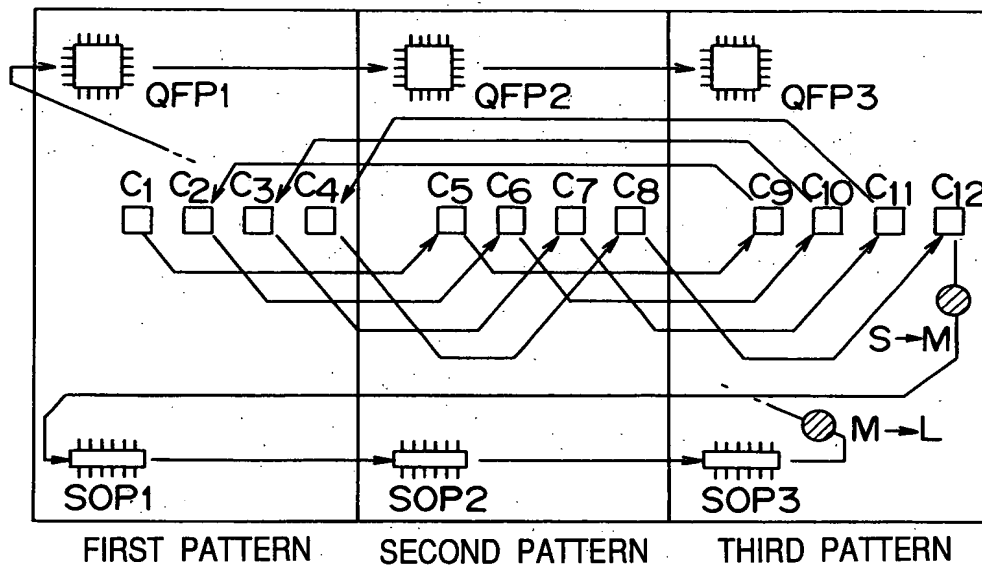
	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2	1	C2	2	S
3	1	C3	3	S
4	1	C4	4	S
5	2	C5	1	S
6	2	C6	2	S
7	2	C7	3	S
8	2	C8	4	S
9	3	C9	1	S
10	3	C10	2	S
11	3	C11	3	S
12	3	C12	4	S
13	1	SOP1	1	M
14		—	2	—
15		—	3	—
16		—	4	—
17	2	SOP2	1	M
18		—	2	—
19		—	3	—
20		—	4	—
21	3	SOP3	1	M
22		—	2	—
23		—	3	—
24		—	4	—
25	1	QFP1	1	L
26		—	2	—
27		—	3	—
28		—	4	—
29	2	QFP2	1	L
30		—	2	—
31		—	3	—
32		—	4	—
33	3	QFP3	1	L
34		—	2	—
35		—	3	—
36		—	4	—

Fig.6



7/21

Fig.7



⊗ NOZZLE CHANGE

8/21

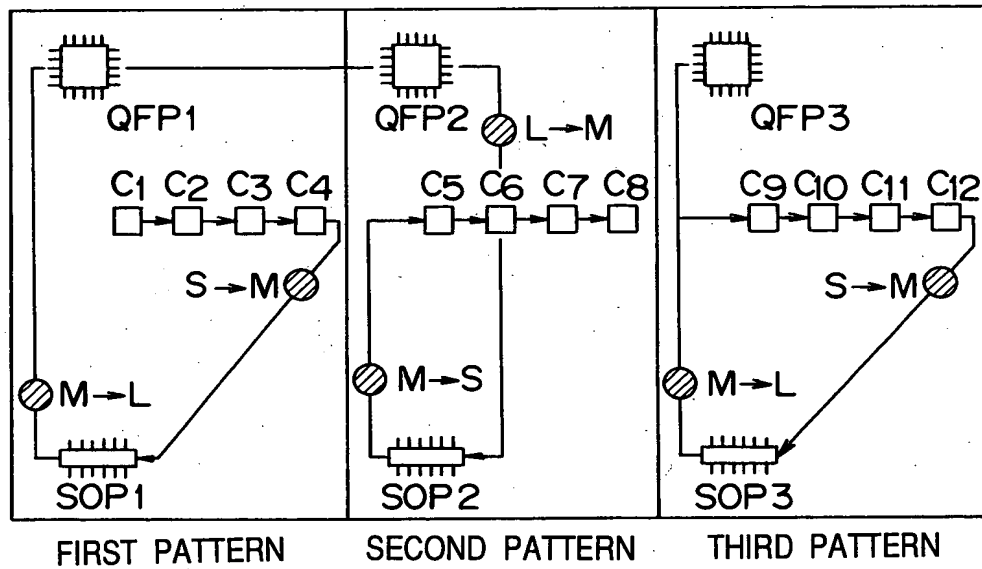
Fig.8

IMPROVED STEP REPEAT METHOD

	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2	2	C5	2	S
3	3	C9	3	S
4		—	4	—
5	1	C2	1	S
6	2	C6	2	S
7	3	C10	3	S
8		—	4	—
9	1	C3	1	S
10	2	C7	2	S
11	3	C11	3	S
12		—	4	—
13	1	C4	1	S
14	2	C8	2	S
15	3	C12	3	S
16		—	4	—
17	1	SOP1	1	M
18		—	2	—
19		—	3	—
20		—	4	—
21	2	SOP2	1	M
22		—	2	—
23		—	3	—
24		—	4	—
25	3	SOP3	1	M
26		—	2	—
27		—	3	—
28		—	4	—
29	1	QFP1	1	L
30		—	2	—
31		—	3	—
32		—	4	—
33	2	QFP2	1	L
34		—	2	—
35		—	3	—
36		—	4	—
37	3	QFP3	1	L
38		—	2	—
39		—	3	—
40		—	4	—

9/21

Fig.9



10/21

Fig.10

REVERSAL METHOD

	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2	1	C2	2	S
3	1	C3	3	S
4	1	C4	4	S
5	1	SOP1	1	M
6		—	2	—
7		—	3	—
8		—	4	—
9	1	QFP1	1	L
10		—	2	—
11		—	3	—
12		—	4	—
13	1	QFP2	1	L
14		—	2	—
15		—	3	—
16		—	4	—
17	2	SOP2	1	M
18		—	2	—
19		—	3	—
20		—	4	—
21	2	C5	1	S
22	2	C6	2	S
23	2	C7	3	S
24	2	C8	4	S
25	3	C9	1	S
26	3	C10	2	S
27	3	C11	3	S
28	3	C12	4	S
29	3	SOP3	1	M
30		—	2	—
31		—	3	—
32		—	4	—
33	3	QFP3	1	L
34		—	2	—
35		—	3	—
36		—	4	—

11/21

Fig. 11A

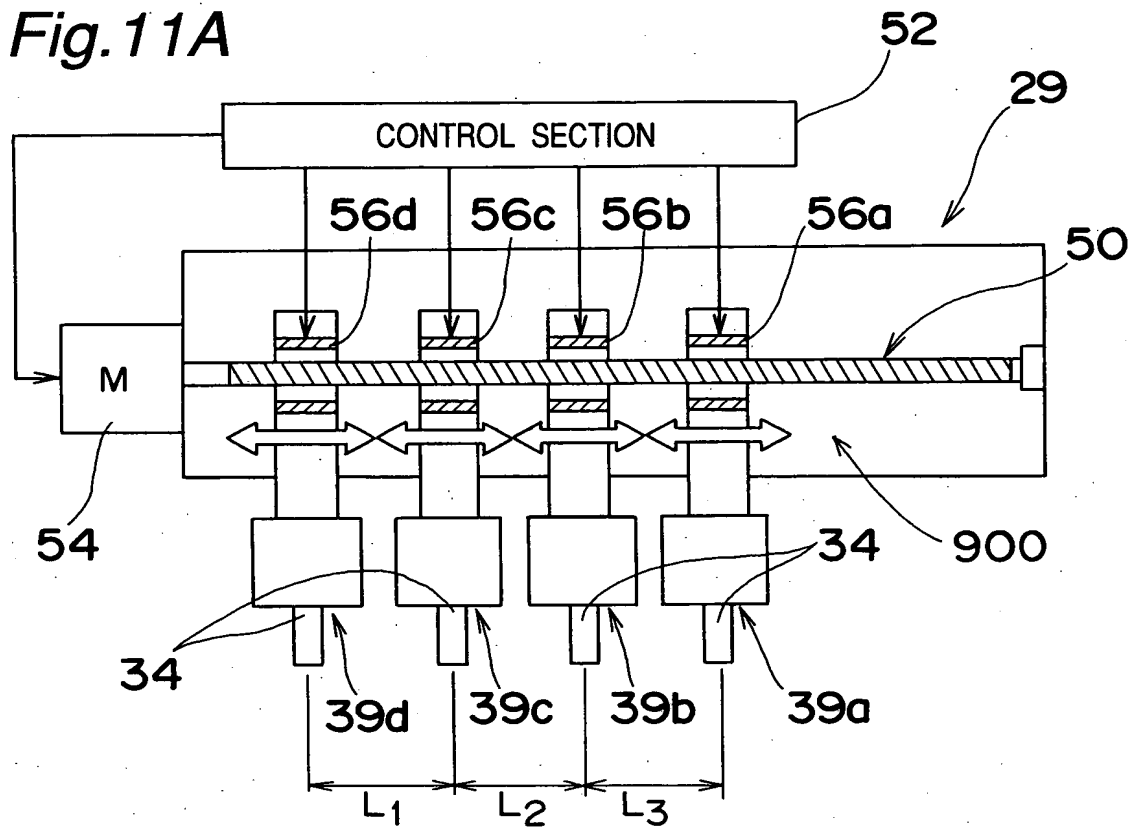
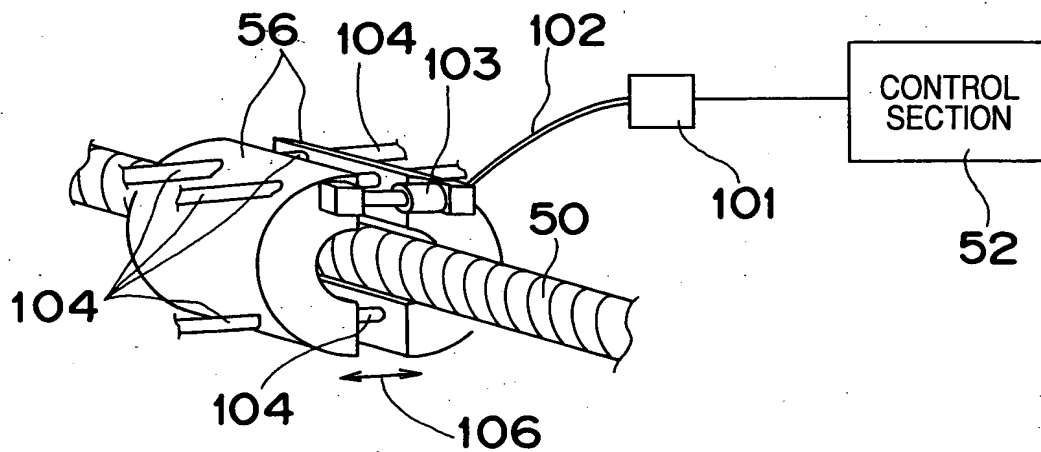


Fig. 11B



12/21

Fig.12

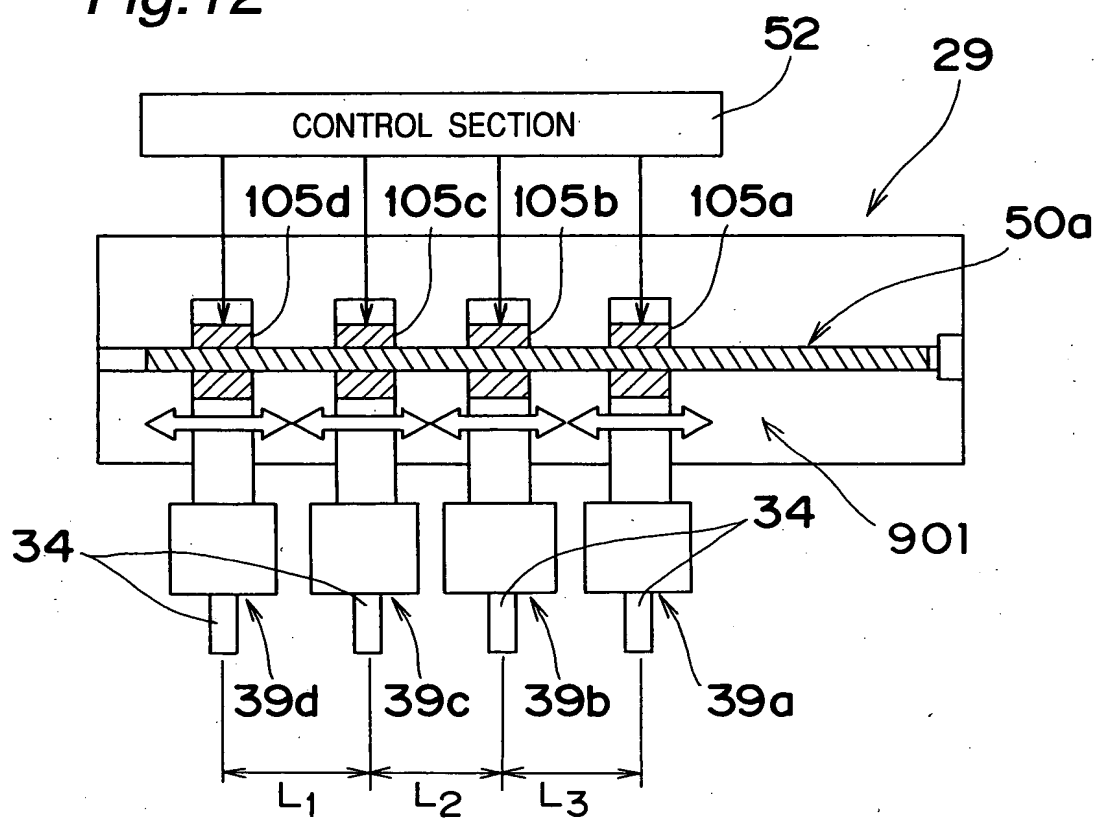


Fig. 13A

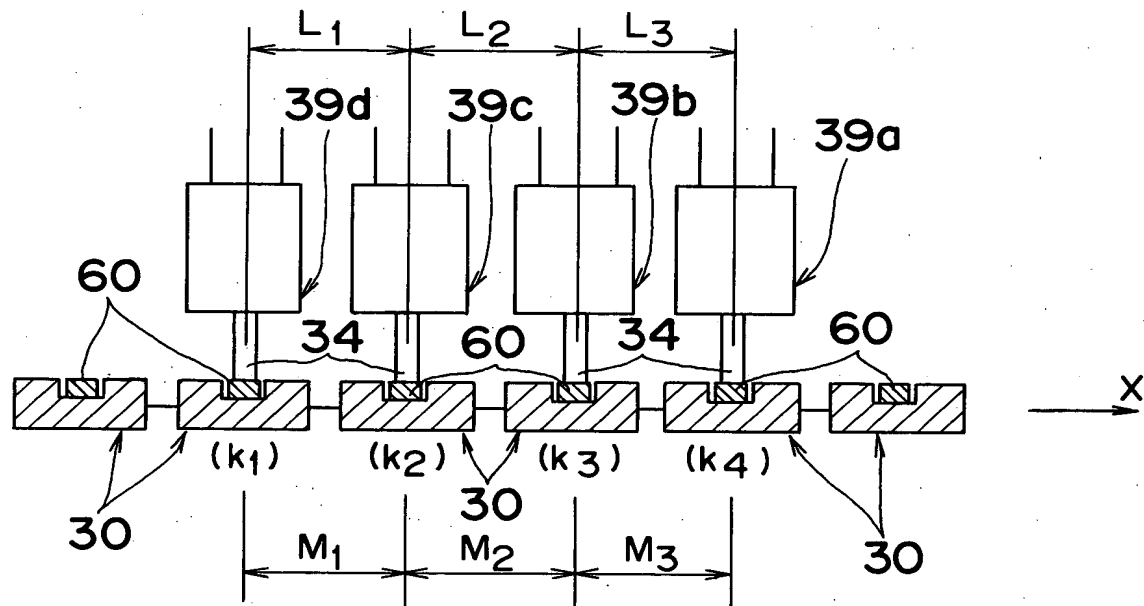
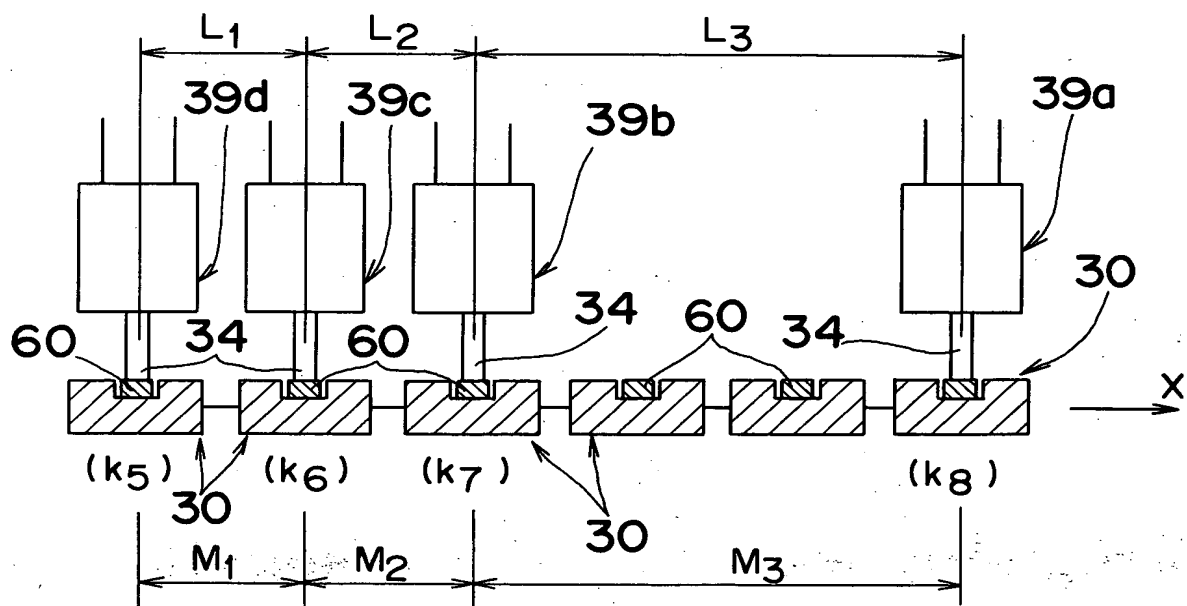


Fig. 13B



14/21

Fig. 14A

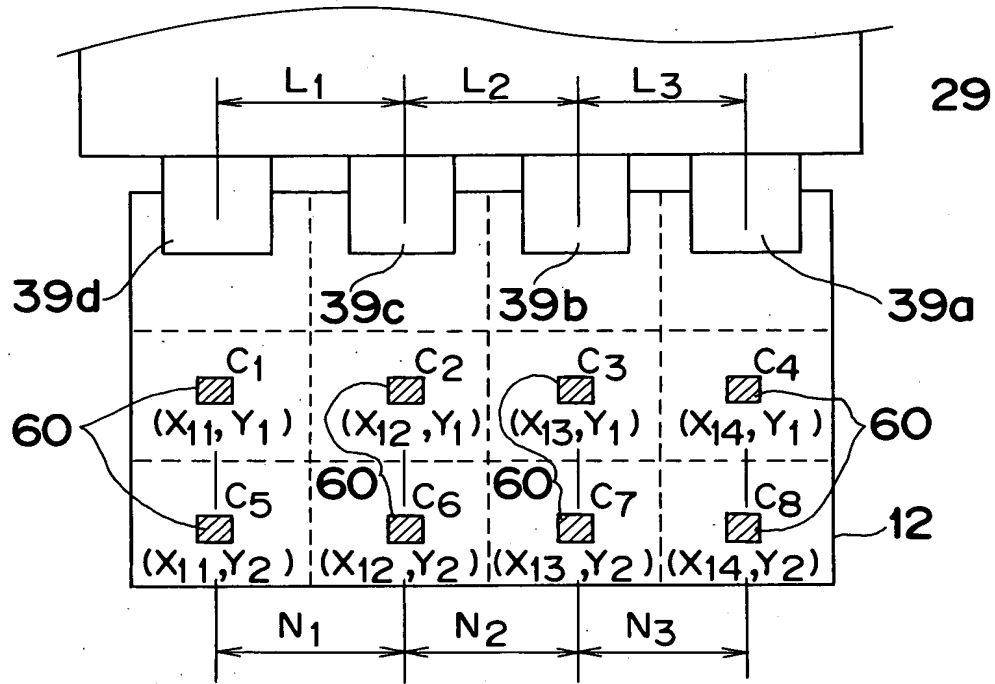


Fig. 14B

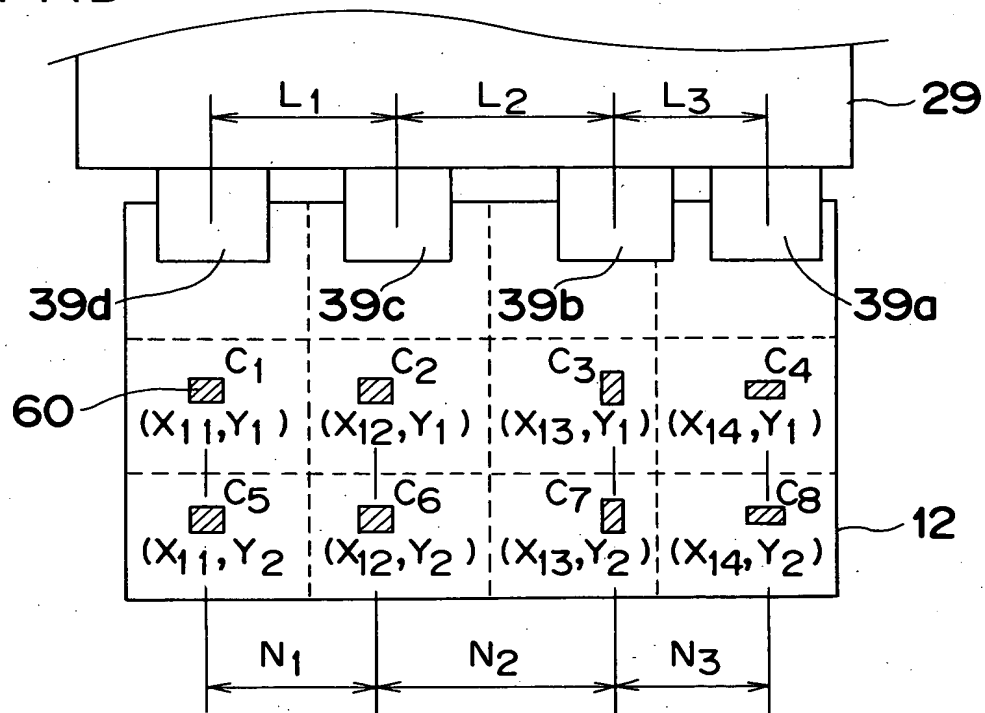
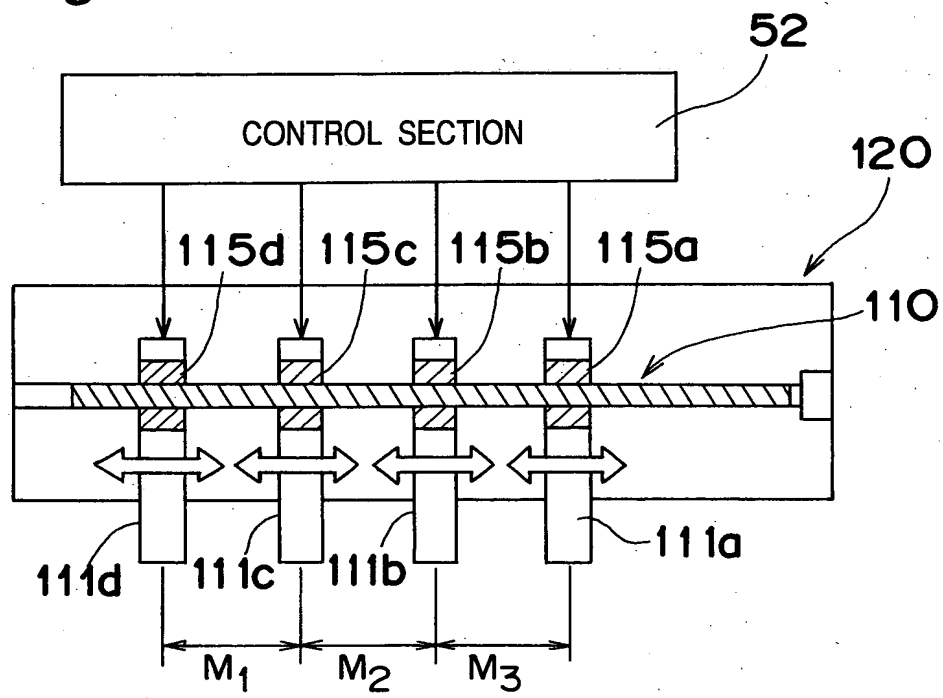


Fig.15

STEP No.	COMPONENT	FEED X	FEED Y	Y PLACEMENT	X PLACEMENT	Y PLACEMENT	Y PLACEMENT HEAD NO.
1	C1	K ₁	0		X ₁₁	Y ₁	39d
2	C2	K ₂	0		X ₁₂	Y ₁	39c
3	C3	K ₃	0		X ₁₃	Y ₁	39b
4	C4	K ₄	0		X ₁₄	Y ₁	39a
5	C5	K ₅	0		X ₁₁	Y ₂	39d
6	C6	K ₆	0		X ₁₂	Y ₂	39c
7	C7	K ₇	0		X ₁₃	Y ₂	39b
8	C8	K ₈	0		X ₁₄	Y ₂	39a

16/21

Fig.16

17/21

Fig.17

STEP REPEAT METHOD

	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2		—	2	—
3		—	3	—
4		—	4	—
5	2	C5	1	S
6		—	2	—
7		—	3	—
8		—	4	—
9	3	C9	1	S
10		—	2	—
11		—	3	—
12		—	4	—
13	1	C2	1	S
14		—	2	—
15		—	3	—
16		—	4	—
17	2	C6	1	S
18		—	2	—
19		—	3	—
20		—	4	—
21	3	C10	1	S
22		—	2	—
23		—	3	—
24		—	4	—
45	3	C12	1	S
46		—	2	—
47		—	3	—
48		—	4	—
49	1	SOP1	1	M
50		—	2	—
51		—	3	—
52		—	4	—
53	2	SOP2	1	M
54		—	2	—
55		—	3	—
56		—	4	—
57				

Fig.18

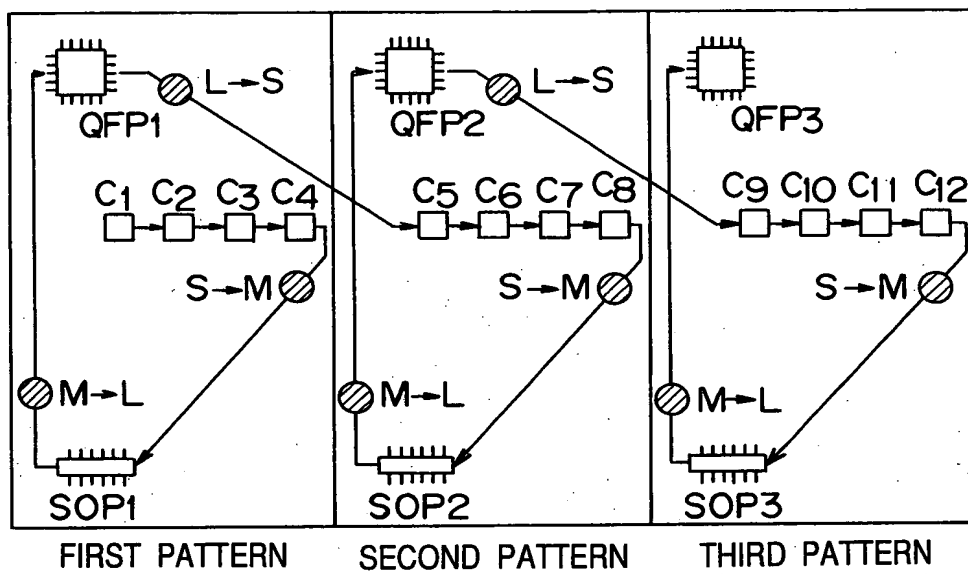


Fig.19**PATTERN REPEAT METHOD**

	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2	1	C2	2	S
3	1	C3	3	S
4	1	C4	4	S
5	1	SOP1	1	M
6		—	2	—
7		—	3	—
8		—	4	—
9	1	QFP1	1	L
10		—	2	—
11		—	3	—
12		—	4	—
13	2	C5	1	S
14	2	C6	2	S
15	2	C7	3	S
16	2	C8	4	S
17	2	SOP2	1	M
18		—	2	—
19		—	3	—
20		—	4	—
21	2	QFP2	1	L
22		—	2	—
23		—	3	—
24		—	4	—
25	3	C9	1	S
26	3	C10	2	S
27	3	C11	3	S
28	3	C12	4	S
29	3	SOP3	1	M
30		—	2	—
31		—	3	—
32		—	4	—
33	3	QFP3	1	L
34		—	2	—
35		—	3	—
36		—	4	—

20/21

Fig.20A

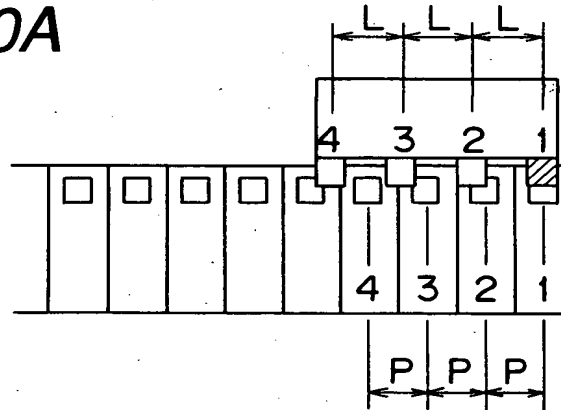


Fig.20B

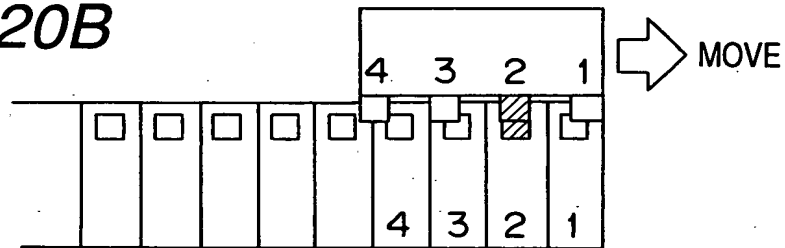


Fig.20C

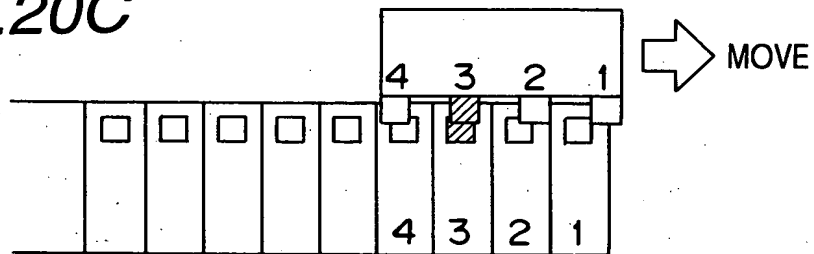


Fig.20D

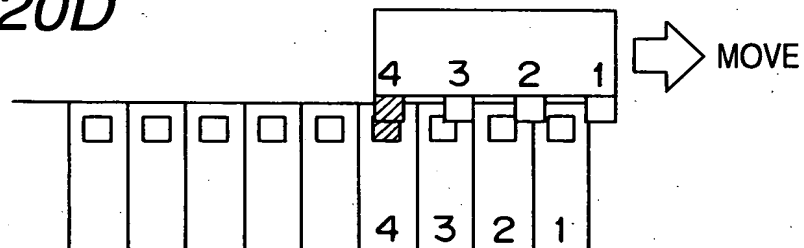


Fig.21

